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ZOOLOGICAL ABSTRACTS

Barbour, Henry G. The heat-regulating mechanism of the body. *Physiol. Rev.,* Baltimore, **1**: 295–326. 1921. This review of the literature shows that even among reptiles and amphibians an attempt is made "to resist the temperature of the environment." In the warm-blooded animals the body has several mechanisms for protecting itself against heat or cold, but these mechanisms are not equally developed in the various systematic groups. Insulating materials aid in decreasing heat loss; changes in the amount of peripheral blood circulation, due partly to a shift in the water supplies of the body, vary the amount of heat lost by radiation and conduction; the rate of evaporation of water is important in the loss of heat; while shivering movements (muscular activity) and changes in the rate of metabolism may vary the amount of heat produced. "The temperature of the body is regulated by water shifting, but under nerve control." L. R. DICE.

Besson, Louis. Influence de la température sur le nombre de décès par diarrhée infantile, à Paris. *C. R. de l'acad. sci. Paris,* **172**: 401–404. Feb. 14, 1921. Below 16°.5 C. there is no apparent correlation between temperature and the number of deaths from infantile diarrhea; above that point, however, the number of deaths increases rapidly with the temperature. A mathematical formula by which the number of deaths can be calculated is presented. Climatic factors other than temperature seem to have no direct effect. L. R. DICE.

Brues, C. T. Correlation of taxonomic affinities with food habits in Hymenoptera with special reference to parasitism. *Amer. Nat.,* **55**: 134–164. 1921. A general discussion of the relationship of host and parasites largely from a phylogenetic viewpoint. An extended bibliography is given. R. N. CHAPMAN.

Coker, R. E., A. F. Shira, H. W. Clark, and **A. D. Howard.** Natural history and propagation of fresh-water mussels. *Bull. Bur. Fish.,* **37**: 75–181. 1921. This paper is one of the most comprehensive on the subject that has been published. Part I is devoted to the natural history of the river mussels, and information on breeding habits, differences in environment, feeding habits, as well as seasonal habits, is given. The section on habitat (pp. 94–120) will be especially valuable to the ecologist and will doubtless suggest ways of studying these animals. The photographs of habitats are especially valuable. The section on growth of shell is very timely and a careful study of the results of experiments will prevent ecologists making mistakes in estimating the ages of shells. Part II, on the life-history and propagation of mussels, brings this interesting subject up to date. The photographs showing gravid females with the marsupium charged with glochidia, are excellent and are the first figures which so strikingly picture the remarkable change which this breeding feature makes in the breathing organ. It is easy to understand the new classification of the Naiades in the presence of these figures. The paper concludes with a good bibliography of recent papers on river mussels. F. C. BAKER.

Cook, William C. Studies on the flight of nocturnal Lepidoptera. *Eighteenth Rept. St. Entom. Minn.,* 43–56. 1920. The effect of temperature, pressure, humidity, and other factors are considered in relation to the number of moths flying. Statistical methods were used in handling the data. The method of partial correlation was used to measure the effect. R. N. CHAPMAN.

Dice, Lee Raymond. The land vertebrate associations of interior Alaska. *Univ.*

Mich., Occ. papers Mus. Zool., no. 85, 24 pp., 1 fig., 4 pls. 1920. This paper consists chiefly of descriptions of habitats and associations based mainly of a study of the regions near Fairbanks, near Tanana, and along the Kuskokwim River in interior Alaska. The climatic conditions of the region are briefly recorded. Nineteen associations are described, and characteristic species of land vertebrates for each are listed. These associations are designated as aquatic, shore, cut-bank, cliff, equisetum, sedge, niggerhead, valley willow-alder, poplar, white spruce-paper birch, black spruce, timber-line willow-alder, blueberry-dwarf birch, bare ridge, rocky slope, aerial, burn, cultivated field, and edificarian. H. H. T. JACKSON.

Dice, Lee Raymond. The mammals of Warren Woods, Berrien County, Michigan. *Univ. Mich., Occ. papers Mus. Zool.*, no. 86, 20 pp., 1 fig., 2 pls. 1920. The mammal habitats, which might equally as well have been designated as ecological associations, are divided into two groups: natural habitats, and modified and artificial habitats. Under natural habitats are grouped the aquatic, buttonbush-swamp, shore, mud-bar herbage, flood-plain forest, beech-maple forest, and aerial. Under modified and artificial habitats we find second-growth forest and scrub, cleared-upland rush, cleared-upland sedge, cleared-upland blue-grass, cultivated field, orchard, and edificarian. A map shows the distribution of the various mammal habitats of these woods. H. H. T. JACKSON.

Forbes, Stephen Alfred, and **Robert Earl Richardson.** The fishes of Illinois. *Nat. Hist. Surv. Illinois*, vol. 3 (ed. 2). 1920. Students of the ecology of fishes will welcome this second edition of a work which contains the best account of the ecology of American fresh-water fishes. Except for the addition of some new colored plates, the edition is virtually a reprint of the original (1908) edition; even the nomenclature of the fishes treated is not modernized. C. L. HUBBS.

Graham, S. A. Factors influencing the subcortical temperatures of logs. *Eighteenth Rept. St. Entom. Minn.*, 26–42. 1920. An analysis of the factors concerned with the temperature of logs from the standpoint of the environment of insects which live under the bark. R. N. CHAPMAN.

Kraatz, W. C. A preliminary general survey of the macro-fauna of Mirror Lake on the Ohio State University Campus. *Ohio Jour. Sci.*, **21**: 137–182. 1921. The distribution of the various species found is considered from the ecological viewpoint. A table gives the distribution with regard to stations. No analysis is given of factors at the stations. R. N. CHAPMAN.

McGregor, Richard C. Some features of the Philippine ornis with notes on the vegetation in relation to the avifauna. *Philippine Jour. Sci.*, **16**: 361–437, pls. 1–35. April, 1920. Lists the characteristic birds of each of the native types of forest: Mangrove, Beach, Dipterocarp, Molave, Pine, and Mossy; and also the characteristic species of thickets and grasslands, of the shores, and of the City of Manila. Critisizes Steere's law of distribution of non-migratory Philippine land birds, stating that in several cases two species of the same genus do occur together. Includes a table showing the distribution of species in the eleven faunal areas of the Archipelago. L. R. DICE.

Pearse, A. S. The fishes of Lake Valencia, Venezuela. *Univ. Wisconsin Studies in Science*, no. 1. 1920. Considers the distribution, the food, and the parasites of the fishes of this tropical American lake. C. L. HUBBS.

Wade, J. S. Notes on ecology of injurious Tenebrionidae. *Entom. News*, **32**: 1–6. 1921. General statements with regard to distribution, climatic limitations, and soil conditions of their environment. R. N. CHAPMAN.